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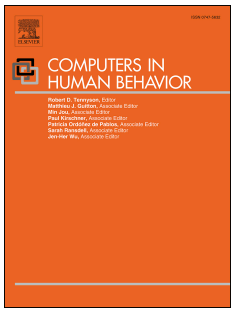

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Cyberbullying Victimization at Work: Social Media Identity Bubble Approach

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Abstract

Cyberbullying at work takes many forms, from aggressive and threatening behavior to social ostracism. It can also have adverse consequences on general well-being that might be even more severe for people whose identities are centrally based on social media ties. We examined this type of identity-driven social media use via the concept of social media identity bubbles. We first analyzed the risk and protective factors associated with cyberbullying victimization at work and then investigated impacts on well-being. We expected that workers strongly involved in social media identity bubbles would be in the worst position when faced with cyberbullying. Data include a sample of workers from five Finnish expert organizations (N = 563) and a representative sample of Finnish workers (N = 1817). We investigated cyberbullying at work with 10 questions adapted from the Cyberbullying Behavior Questionnaire Other measures included scales for private and professional social media usage, social media identity bubbles (six-item Identity Bubble Reinforcement Scale), well-being at work, sociodemographic factors, and job-related information. Prevalence of monthly cyberbullying victimization at work was 13% in expert organizations and 17% in the Finnish working population. Victims were young, active users of professional social media and were strongly involved in social media identity bubbles. Victims who were in social media identity bubbles reported higher psychological distress, exhaustion, and technostress than other victims. Cyberbullying at work is a prevalent phenomenon and has negative outcomes on well-being at work. Negative consequences are more severe among those with highly identity-driven social media use.

Keywords: cyberbullying, work, well-being, social media, identity, victimization

Cyberbullying Victimization at Work: Social Media Identity Bubble Approach

Development of information and communication technologies and especially social media has quickly changed patterns of social interaction during the past decade (Keipi, Näsi, Oksanen, & Räsänen, 2017; van Dijk, 2012; Lieberman & Schroeder, 2020). Cyberbullying (i.e., online bullying) at work is a relatively new phenomenon as work has increasingly moved online in recent years (Kowalski, Toth, & Morgan, 2018). Cyberbullying shares the same main characteristics as traditional bullying and takes place within communication conducted via e-mail, instant messaging services, and social networking sites (Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Payne & Hutzell, 2017; Smith et al., 2008; Zych, Ortega-Ruiz, & Del Rey, 2015) and takes different forms, from aggressive, harassing, and threatening behavior to rumor spreading and social exclusion (Baruch, 2005; Farley, Sprigg, Axtell, & Coyne, 2013; Kowalski, & Morgan, 2018).

Cyberbullying has so far been studied mainly among youth, and studies conducted on cyberbullying in the context of work are scarce (Farley, Coyne, & Cruz, 2018; Kowalski et al., 2018; Privitera & Campbell, 2009; Snyman & Loh, 2015). Past studies suggest that work stressors such as role conflicts, interpersonal conflicts, organizational changes, and poor social climate at work give rise to cyberbullying behavior (Forssell, 2018; Vranjes, Baillien, Vandebosch, Erreygers, & De Witte, 2017). Offline workplace bullying victimization has been found to be associated with several psychological wellbeing outcomes (Agervold & Mikkelsen, 2004; Bowling & Beehr, 2006; Hansen et al., 2006; Lutgen□Sandvik, Tracy, & Alberts, 2007; Nielsen, Hetland, Matthiesen, & Einarsen, 2012; Rodríguez-Muñoz, Baillien, De Witte, Moreno-Jiménez, & Pastor, 2009; Verkuil, Atasayi, & Molendijk, 2015), which could apply to online workplace bullying as well (Forssell, 2016). However, more investigation of key predictors of

cyberbullying behavior and associated psychosocial problems is needed considering the increasing use of social media. Indeed, researchers of workplace bullying have acknowledged the technological transformation and called for research on cyberbullying in the work context (Bartlett & Bartlett, 2011; Branch, Ramsay, & Barker, 2013).

Through this study, we aimed to fill gaps in current research on cyberbullying victimization at work, and we designed it to take into account the increasing prevalence of social media technology. Our aim was first to analyze risk and protective factors associated with cyberbullying victimization at work. In the second part of the study, we analyzed how cyberbullying victimization at work is associated with psychological problems including psychological distress, technostress, and work exhaustion. The second part was grounded on the theoretical framework of the identity bubble reinforcement model introduced by Keipi, Näsi, Oksanen, and Räsänen (2017).

Cyberbullying at Work

Traditional bullying definitions are a basis for considering bullying in the context of the Internet and social media. Cyberbullying is most commonly defined by the main elements of repetition, power imbalance, aggression, and intention, which are common to traditional offline bullying (Langos, 2012; Olweus, 2013; Ybarra, Korchmaros, & Oppenheim, 2011). Evidently, the use of information technology and occurrence in the online context are involved in the phenomenon (Smith et al., 2008). Furthermore, cyberbullying includes specific features of possibility for the perpetrator to stay anonymous (Kowalski & Limber, 2007), easy availability of victims, and possibility to bully victims at any time (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). Cyberbullying has also been noted to overlap with traditional bullying especially in the studies involving children and adolescents (Gini, Card, & Pozzoli, 2018).

Given the several similarities between offline and online bullying, the main differences are necessary to emphasize. There are various types of cyberbullying, from direct cyberbullying to indirect cyberbullying, depending on whether the electronic communication is directly aimed at the victim or posted on the Internet without the victim's control or awareness (Langos, 2012). A number of researchers have argued that a single offensive online act that harms the victim can be treated as bullying behavior (Langos, 2012; Pettalia, Levin, & Dickson, 2013; Slonje & Smith, 2008). This is one of the main differences between online and offline bullying because traditionally bullying is repetitious, but on the Internet, a one-time act can already cause harm because it is exposed to wide audiences and can be accessed repeatedly (Kowalski et al., 2014; Slonje & Smith, 2008). The bullying event is also less temporary because the permanent removal of harmful content from the Internet is not often possible. There is also a conceptual difference among cyberbullying, cyberaggression, and cyber incivility because the latter two are more frequently occurring behaviors (Coyne et al., 2017). Cyberbullying can also occur regardless of time and space and is more recognizable (Smith et al., 2008).

As cyberbullying is a new phenomenon, the research is still building up and there are also limitations in the field including lack or research evidence and heterogenous measures, which have impact on the prevalence rates (Olweus, & Limber, 2018; Olweus, 2017). Also, some authors argue that cyberbullying victimization is just an extension of traditional bullying and it should not be overstated as a phenomenon (Wolke, Lee, & Guy, 2017). For example, Olweus and Limber (2018) denote that it is also difficult to know to what extent some of the claimed negative effects of cyberbullying (e.g. depression) is caused by cyberbullying and not by traditional bullying. These critical claims are very important and valid to consider especially in the school context where cyberbullying has been studied. Yet, workplace context is much more

heterogenous when it comes to the role of online and offline communication (e.g. professional social networks based on virtual communication). All this underlines the need for more studies on cyberbullying. Also considering that people use more information and communication technologies and social media than before, online and offline realities are merging (Keipi et al., 2017). This is particularly important at work life as different online and social media solutions have become part of everyday reality in many fields.

Research on cyberbullying at work is an extension of previous studies on bullying at work and is in its early stages (Farley et al., 2018). However, cyberbullying is closely related to workplace bullying in general, which is evident in a finding that cyberbullied employees usually get bullied face-to-face as well (Privitera & Campbell, 2009). Cyberbullying at work may take many forms of aggressive and threatening behavior, such as sending offensive e-mail messages including insults, personal threats, intimidation, sexual harassment, or other verbal abuse (Baruch, 2005); withholding work-related information; spreading rumors or unwanted photos of colleagues on social media (Farley et al., 2018); and social exclusion (Kowalski et al., 2018).

As emphasized by researchers of workplace bullying and social support (Branch et al., 2013), the work atmosphere plays a key role because it can provoke stressful emotions of fear and sadness that are further associated with workplace cyberbullying exposure (Vranjes et al., 2017). Forssell (2016) found that men and supervisors are more likely to be victims of cyberbullying at work. Her further analysis also indicated that younger age, poor organizational climate, and low support from managers were associated with cyberbullying victimization (Forssell, 2018). Gardner et al. (2016) discovered partly similar findings. Those who receive less organizational support, are in managerial position, have lowered physical health, and are under

the influence of inefficient organizational strategies have higher probability of facing cyberbullying. Thus, it can be said that work settings play a crucial role in cyberbullying.

Some personal characteristics may help people to overcome cyberbullying at work. Snyman and Loh (2015) found that optimistic people suffer less from stress when victimized by cyberbullying compared to other people. They also had a similar finding on the impact of cyberbullying victimization on job satisfaction. Other personality factors remain so far unclear as studies so far have concentrated mostly on cyberbullying among young people and young adults and not directly on cyberbullying at work. In studies on young adults openness and extroversion have been associated with cyberbullying victimization (Peluchette, Karl, Wood, & Williams, 2015), and dark personality traits and especially sadism to cyberbullying offending (van Geel, Goemans, Toprak, & Vedder, 2017).

Inevitably, cyberbullying at work has various negative costs for the individual and the organization (Bartlett & Bartlett, 2011). Cyberbullying can reduce both the psychological and physical well-being of employees (Farley, Coyne, Sprigg, Axtell, & Subramanian, 2015), and its association with stress has been established in several studies (Kowalski et al., 2018; Snyman & Loh, 2015). The link to mental strain (Farley et al., 2015), depression and absenteeism (Kowalski et al., 2018), anxiety and intention to resign (Baruch, 2005), decreased job satisfaction (Barusch, 2005; Coyne et al., 2017; Farley et al., 2015; Snyman & Loh, 2015), and job performance (Barusch, 2005) have also been studied.

Social Media Reinforcement Effects

Social media is currently a very forceful tool for cyberbullying and other types of offending behaviors, and victims are often in a rather weak position (Keipi et al., 2017). Because the use of social media varies by individuals, the impact of cyberbullying might vary as well.

Our starting point is that victimization might be more difficult to cope with for those whose identity is strongly based on online activities. The identity bubble reinforcement model by Keipi et al. (2017) is an attempt to understand how people become involved in social media identity bubbles. In contrast to previous attempts in computer science to understand "filter bubbles" (Pariser, 2011), Keipi et al. (2017) were interested in the psychological side of the phenomenon and sought to show how people use social media to interact with others and validate their identities. This search for identity can lead to identity bubbles that involve (a) closeness to online social networks (social identification), (b) tendency to interact with similarly minded others (homophily), and (c) reliance on information from similarly minded others (information bias) (Kaakinen et al., 2018).

Social identification is based on the fact that people have a social need to belong (Baumeister & Leary, 1995) and their identities are determined by group membership (Tajfel & Turner, 1979). People have a tendency to identify with others and form groups online as well (Cheung, Chiu, & Lee, 2011; Gabbiadini, Mari, Volpato, & Monaci, 2014; Grieve, Indian, Witteveen, Tolan, & Marrington, 2013). These groups are often formed with similarly minded others (McPherson, Smith-Lovin, & Cook, 2001). On social media and the Internet, it is very easy to find people who express the same ideas and opinions (Ridings & Gefen 2004). Eventually, this exposes users to like-minded information (Bakshy et al., 2015) that is likely to be biased (Flaxman, Goel, & Rao 2016). The theory of social media identity integrates these social psychological elements into same model to better understand online behavior (Kaakinen et al., 2018; Keipi et al., 2017).

Like social identity process in general (Tajfel & Turner, 1979; Vignoles, 2011), social media identity bubbles involve various psychosocial motives such as search for self-esteem,

social belonging, and uncertainty reduction. Eventually, this tendency means that people's central activities in life are online. Koivula et al. (2019) showed, for example, that online political activity was positively associated with involvement in online identity bubbles. Those in social media identity bubbles are also more active in sharing content and their pictures on social media and are more likely compulsive Internet users (Kaakinen et al., 2018). High online activity also makes them potentially more vulnerable. Previous studies on online victimization indeed show that highly active users are more likely to be victimized online (Costello, Hawdon, Rafliff, & Grantham, 2016; Kaakinen et al., 2018; Keipi et al., 2017; Näsi et al., 2017).

Identity dynamics shape the way people react to negative experiences, and because of this, social media identity bubbles may impact the potential outcomes of victimization experience. Individuals tend to react more strongly to negative social evaluations and exclusion that threaten important aspects of their identity or positive sense of self (Dickerson, Gruenewald, & Kemeny, 2004; Dickerson & Kemeny, 2004). Thus, online victimization may be more injurious when the individuals' identities are strongly determined by their social media interactions. Hence, it is also likely that being in a social media bubble makes the impact of workplace victimization stronger.

This Study

The starting point for this study was the increasing use of both private and professional social media for work purposes, which changes patterns of everyday interactions. There are currently gaps in the research on social media use and cyberbullying victimization at work. Hence, there is a need to understand whether private and professional social media use influences cyberbullying victimization at work when considering typical risk and protective factors of bullying and harassment at workplaces. Our study was theoretically grounded on

previous studies conducted on bullying and cyberbullying at work (Bartlett & Bartlett, 2011; Bowling & Beehr, 2006; Branch et al., 2013; Farley et al., 2018; Privitera & Campbell, 2009). In the second part of this article, we analyzed negative consequences of cyberbullying victimization and sought to understand the role of social media identity bubbles in that relationship. We based the analysis on the identity bubble reinforcement model that has been previously used in investigations of cybervictimization (Keipi et al., 2017). We set the following hypotheses:

H1. Both private and professional social media use is associated with cyberbullying victimization at work.

H2. Cyberbullying victimization at work is associated with different forms of psychological problems such as psychological distress, technostress, and work exhaustion.

H3. Involvement in social media identity bubbles moderates the relationship between cyberbullying victimization and psychological problems.

Methods

Participants

In this study, we report findings from two datasets that were collected during the same research project. We collected *The social media at work in expert organizations survey* from employees of five professional organizations in November–December 2018. Participants (N = 563) were aged 21–67 years (M = 40.67, SD = 10.86), and 67.67% were female, which reflected the overall gender division in the companies. We conducted the data collection in collaboration with the human resources department of each organization and sent invitations to the online survey via e-mail or internal social media platforms (see Appendix A for details). These organizations represented fields of finance, telecommunications, personnel services, publishing, and retail. The size of the companies ranged from small (under 2,000 employees) to large (over

10,000 employees). Response rates ranged between 3.18% and 34.21% at the five companies (*M* = 17.71, *SD* = 11.90).

We collected the second sample with *The social media at work in Finland survey.* This nationally representative sample was targeted at Finnish employees in general. Participants (*N* = 1817) were aged 18–65 (*M* = 41.37, *SD* = 12.44), and 47.91% were female. Survey questions were the same as in the expert organization survey, but this time, we conducted the data collection in collaboration with Norstat, and we drew the volunteer respondents from their research panel. All the respondents answered the survey online. The response rate for the survey was 28.31%. We used weights to correct minor biases of age and gender in the sample.
The study was approved by the Academic Ethics Committee of [ANONYMIZED] region in December 2018. All participants agreed to voluntarily participate in the online surveys, and they were informed about the aims and purpose of the study. Both surveys were in Finnish. The expert organization survey was conducted using Limesurvey software on the server of [ANONYMIZED] University. The national survey was designed by the research group and administrated by Norstat. Both surveys were optimized for both computers and mobile devices. Both datasets include those respondents who filled out the whole survey, thus the measures used do not include missing data.

Measures

Cyberbullying at work. We investigated cyberbullying at work with 10 questions (see Appendix B) adapted from the Cyberbullying Behavior Questionnaire (Forssell, 2016). It includes items on rude, aggressive, and offensive messages sent to employees via e-mail. These include statements such as, “Assaults on social media have been made on you as a person, your

values or your personal life," "Offensive photos/videos of you have been posted on social media," and "Threatening messages about your friends/your family have been sent to you via social media." Response options for each statement were *never, now and then, monthly, weekly,* and *daily*. Inter-item reliability was acceptable in the expert organization sample (α = .68) and excellent in the nationwide sample (α = .94). We created a dummy variable from the options and analyzed those who had been victimized by cyberbullying on at least a monthly basis (0 = no, 1 = yes).

Social media identity bubbles. We used the six-item Identity Bubble Reinforcement Scale to measure involvement in social media identity bubbles (Kaakinen et al., 2018). The scale includes statements on social identification (e.g., "In social media, I belong to a community or communities that are an important part of my identity"), homophily (e.g., "In social media, I prefer interacting with people who are like me"), and information bias (e.g., "In social media, I feel that people think like me"). The scale for all items ranged from 1 (*does not describe me at all*) to 7 (*describes me completely*). The scale showed good inter-item reliability (expert organization sample: α = .77, nationwide sample: α = .82). For the analysis, we used the 1–7 scale (see Table 1). The scale has been also recently found valid in other samples as well (Kaakinen et al., 2018; Koivula et al., 2019).

Technostress. In the expert organization sample, we used four items selected from Salanova, Llorens, and Cifre's (2013) technostress scales that measure both the invasive and addictive sides of social media use. The adapted items were "I feel tense and anxious when I work with social media," "I feel I use ICT in excess in my life," "I seem to have an inner compulsion to use ICT in whatever place and time," and "It is difficult for me to relax after a day's work using social media." The scale for each item ranged from 0 (*never*) to 6 (*always*).

The final scale had a good inter-item reliability of $\alpha = .81$. The scale ranges from 0 to 24. In the nationwide sample, we measured technostress using the six items on techno-overload and techno-invasion by Ragu-Nathan, Tarafdar, Ragu-Nathan, and Tu (2008). We adapted the items to social media. Examples include, "I am forced to do more work than I can handle due to social media," "I have to be always available due to social media," and "I feel my personal life is being invaded by social media." For all items, the scale ranged from 1 (*disagrees completely*) to 7 (*agrees completely*). The scale showed a good inter-item reliability of $\alpha = .89$. The scale ranged from 6 to 42.

Work exhaustion. We used five questions from the Maslach Burnout Indicator (Maslach, Jackson, & Leitner, 2018) to measure work exhaustion: "I feel emotionally drained from my work," "I feel used up at the end of the workday," "I feel tired when I get up in the morning and have to face another day on the job," "Working all day is really a strain for me," and "I feel burned out from my work." Answer options used were *Never, A few times a year or less, Once a month or less, A few times a month, Once a week, A few times a week,* and *Every day,* with answers given numerical values of 0–6, respectively. The scale had excellent internal consistency in both samples (expert organization sample: $\alpha = .91$, nationwide sample: $\alpha = .92$). Internal consistence of the measure has been found good also in other studies (Golden, 2006; Hakanen, Bakker, & Schaufeli, 2006).

Psychological distress. We measured psychological distress with the 12-item General Health Questionnaire, which has been extensively utilized in general population studies across the world (Goldberg & Hillier, 1979; Goldberg et al., 1997; Kalliath, O'Driscoll, & Brough, 2004). The questions, with answer options from 1 to 4, include, for example, "Have you recently been able to enjoy your normal day-to-day activities *(More so than usual – Same as usual – Less*

so than usual – Much less than usual)?" and "Have you recently been thinking of yourself as a worthless person *(Not at all – No more than usual – Rather more than usual – Much more than usual)*?" The scale had excellent internal consistency in both samples (expert organization sample: α = .89, nationwide sample: α = .92). We applied bimodal scoring (0-0-1-1; Pevalin, 2000), and the scale ranged from 0 to 12, with higher scores indicating higher psychological distress.

Social media use. We measured private social media use by asking about the usage of 14 different social media platforms, such as Facebook and YouTube. The answer options were *I don't use it*, *Less than weekly*, *Weekly*, *Daily*, and *Many times a day*, with answers given numerical values of 0–4, respectively. The scale had acceptable internal consistency in both samples (expert organization sample: α = .64, nationwide sample: α = .73). We summed up the answers and divided them by the number of questions, resulting in a scale of 0–4. We measured professional social media use by asking about the usage of 21 different social media platforms, such as MS Teams and Yammer. The answer options were *I don't use it*, *Less than weekly*, *Weekly*, *Daily*, and *Many times a day*, with answers given numerical values of 0–4, respectively. The scales had from acceptable to good internal consistency (expert organization sample: α = .67, nationwide sample: α = .85). We summed up the answers and divided them by the number of questions, resulting in a scale of 0–4.

Sociodemographic and occupational information. We included age, gender, and education from the standard sociodemographic information. We categorized occupational area into seven broader categories in the nationwide survey based on responses from the participants on the field that was closest to their work or study from the list of International Standard Industrial Classification of All Economic Activities. We also asked whether they were in

managerial position and whether they worked remotely part of their working time. We asked about support from the supervisor with the following question: "How often you get help or support from your supervisor?" Answer options were *Never or hardly ever, Rarely, Sometimes, Often,* and *Always*. We created a low support dummy variable to indicate those who got support only rarely and those who got support at least sometimes or more often (high support = 0, low support = 1).

Statistical Techniques

We used Stata16 software for the analysis and analyzed risk factors for cyberbullying victimization at work with logistic regression. We modelled the association between background variables and the binary outcome. The effects of the independent variables are presented as odds ratios (OR) and average marginal effects (AME). AME coefficients provide reliable and comparable predictions from a model while also taking into account other independent variables (Mood, 2010). Model statistics include pseudo coefficients of determination (Nagelkerke pseudo R^2).

We conducted analyses on psychological distress, technostress, and work exhaustion using ordinary least squares regression, and report regression coefficients, standard deviations (SDs), beta coefficients (β), and statistical significance (*p*). There are two models for each independent variable in both datasets. We first report the full models with all independent variables. In the second models, we added an interaction term (social media identity bubble x cyberbullying at work) because we were interested in seeing how the association between cyberbullying victimization and well-being (psychological distress, technostress, and work exhaustion) was moderated by the involvement in social media identity bubbles. We also visualized these using predictive margins and by setting involvement in social media bubbles to

low (mean - 1 or lower), average (mean ± 1), or high (mean + 1 or higher). Due to the heteroscedasticity of residuals, we ran all the models using Huber-White standard errors (i.e., robust standard errors).

Results

Cyberbullying Victimization at Work

Prevalence of monthly cyberbullying at work was 12.61% in expert organizations and 17.39% in the Finnish working population. In expert organizations, the prevalence of cyberbullying victimization ranged from 9.62 % to 14.95% in different organizations, and the differences between organizations were not statistically significant. Also, in the national data we did not find statistically significant differences between fields despite some variance.

The most common forms of cyberbullying victimization in expert organizations were related to social exclusion and aggressively worded messages. Notable expert workers did not report monthly victimization by offensive photos/videos or false statements sent about them in social media. In the national Finnish workers sample, the spread of different forms of cybervictimization was more equal. For example, 5.23% reported that threatening messages regarding their friends or their family had been sent to them via social media, and 4.90% reported being assaulted monthly on social media because of their personality, values, or personal life.

Using logistic regression analysis, we modelled the association between monthly cyberbullying victimization at work and background variables. Analysis of expert organization workers showed first that younger age (OR = 0.97, AME = -.003, $p < .001$), low support from the supervisor (OR = 3.54, AME = .134, $p < .001$), private social media use (OR = 1.91, AME = .071; $p = .024$), and professional social media use (OR = 2.59, AME = .104, $p = .008$) were

associated with monthly cyberbullying at work. In the full model including all the independent variables, only age (OR = 0.97, AME = -.004, p = .023), low support from the supervisor (OR = 3.73, AME = .135, p < .001), and professional social media use (OR = 2.96, AME = .111, p = 0.027) remained statistically significant. The results hence indicate, for example, that those who get low support from their supervisors are on average 13.5% more likely to be victims of cyberbullying at work.

Analysis of the national sample of workers showed some statistically significant findings in gender, age, education, and occupational area. Victims were more commonly young, men, and had a lower level of education. For example, those with a university degree had about a 15% lower likelihood of being victims of cyberbullying at work compared to those with primary education (p = .004). Differences between occupational fields were very small, but those in the health and welfare sectors reported lower cyberbullying victimization at work than those in the manufacturing sector (OR = 0.67, AME = -0.054, p = .042). This difference was not significant after controlling for age and gender. We also found that monthly cyberbullying at work was associated with being in a managerial position, remote work, having low support from the supervisor, private social media use, professional social media use, and social media identity bubbles. Most of these unadjusted effects also remained in the full model. It is notable that professional social media use (OR = 3.44, AME = 0.158, p < .001) and involvement in social media identity bubbles (OR = 1.19, AME = 0.022, p = .005) were both strongly associated with monthly cyberbullying at work.

Cyberbullying, Social Media Identity Bubbles, and Well-Being

In the second part of the results, we focus on the potential negative impacts of cyberbullying victimization at work. All the models included the same independent variables as the logistic regression tables. Results based on expert organization workers showed that cyberbullying was a predictor of psychological distress (β = .13, p = .002), technostress (β = .11, p = .004), and work exhaustion (β = .19, p < .001) in the ordinary least squares regression Model 1 (see Table 4). In Model 2, we added interaction terms. The results showed that involvement in social media identity bubbles had a moderation effect. In other words, those who are strongly involved in social media identity bubbles reported higher psychological distress (β = .47, p < .001), technostress (β = .23, p = .040), and work exhaustion (β = .29, p = .014) than other victims (see Table 4). Adjusted predictions represented in Figures 1–3 demonstrate that there is no difference in psychological problems between victims and non-victims when involvement in social media identity bubbles is low, but the difference becomes significant when involvement increases. The difference is particularly strong in Figures 1 (psychological distress) and 3 (work exhaustion), but less so in Figure 2 (technostress).

Results based on the national sample showed that cyberbullying was a predictor of psychological distress (β = .24, p < .001), technostress (β = .16, p < .001), and work exhaustion (β = .21, p < .001) in the ordinary least squares regression Model 1 (see Table 5). In Model 2, we added interaction terms, but this was significant only in the model measuring technostress (β = .21, p = .013; see Table 5). Adjusted predictions represented in Figure 4 show that the difference between victims and non-victims becomes significant when involvement in social media identity bubbles is medium or high. Victims of cyberbullying highly involved in social media identity bubbles reported the highest technostress.

Discussion

In this study, we investigated cyberbullying at work using two samples from Finland. Our aim was first to analyze risk and protective factors associated with cyberbullying at work. Prevalence of monthly cyberbullying at work was relatively high: 12.61% in expert organizations and 17.39% in the national sample. Even some of the most severe forms of victimization were prevalent in the national data. We found no major differences between occupational fields, indicating that cyberbullying at work concerns workers in a variety of fields in Finland. These findings hence contribute to the general discussion on the need for studies on cyberbullying at work (Bartlett & Bartlett, 2011; Branch et al., 2013).

Our findings indicated that professional social media use was associated with cyberbullying victimization, which partly confirmed our hypothesis on private and professional social media use. Both were associated with cyberbullying victimization at work, but in the final models including all variables, only professional social media use mattered. These findings underline the dual nature of increasing use of professional social media. Although social media services have benefits for work (e.g., Ellison, Gibbs, & Weber, 2015; Leonardi, Huysman, & Steinfield, 2013), they might also have negative consequences if there are problems in the general social climate at work. Our findings also indicated that younger age and low support from supervisors were associated with cyberbullying victimization at work in both samples. These findings are in line with previous findings (Forssell, 2018). This finding points out the importance of organizations to take better care for their younger employees to protect work-related cyberbullying and provide adequate supervisor support for their work.

The second part of the analysis showed that cyberbullying victims reported psychological distress, technostress, and work exhaustion. These findings are in the line with previous research findings on cyberbullying at work (Farley et al., 2015; Kowalski et al., 2018; Snyman & Loh,

2015). The direct relationship between workplace cyberbullying victimization and technostress was a novel finding, thus contributing to exiting literature (Camacho, Hassanein, & Head, 2018; Cao, Khan, Ali, & Khan, 2019). Psychological problems caused by bullying at work can have long-lasting effects on the individuals and they are not often quickly fixed (Agervold & Mikkelsen, 2004; Bowling & Beehr, 2006; Hansen et al., 2006; Lutgen□Sandvik, Tracy, & Alberts, 2007; Nielsen, Hetland, Matthiesen, & Einarsen, 2012; Rodríguez-Muñoz, Baillien, De Witte, Moreno-Jiménez, & Pastor, 2009; Verkuil, Atasayi, & Molendijk, 2015). Cyberbullying victimization at work can therefore may have a negative impact on employees' productivity and can increase sick leaves. If employees are absent from work, this may in turn increase coworkers' workload. Hence, the consequences can be cumulative and can expand to the offline context. Previous research suggests that those who are cyberbullied are often bullied offline as well (Privitera & Campbell, 2009). Problems with cyberbullying can therefore indicate that there might be more extensive tensions within the work teams and even in the organizational culture.

Our study additionally demonstrates the role of social media identity bubbles. Those who were strongly active in social media identity bubbles reported higher psychological distress, technostress, and work exhaustion in the expert organization sample. In the national data, social media identity bubbles had a similar moderating role only for technostress. The results indicate that people who use social media in an identity-driven matter are more likely to be vulnerable when facing cyberbullying. This result is grounded on the previous notion that individuals tend to react more strongly when the crucial parts of their identities are threatened (Dickerson et al., 2004; Dickerson & Kemeny, 2004). Those who are in social media identity bubbles have weaker means to cope with cyberbullying that also takes place on social media. Identity bubbles guide people's activities (Koivula et al., 2019) and are related to social identification processes

(Kaakinen et al., 2018; Vignoles, 2011). Thus, being a victim of abuse, defaming, or social exclusion on social media (Baruch, 2005; Kowalski et al., 2018) endangers these highly important motivations and activities. Based on our results, for those with less identity-driven social media use, the damages of cyberbullying victimization appear to be more limited. This is a challenge for organizations and should be taking into account in social media guidelines and cyberbullying procedures to strengthen employees diverse social media usage and coping skills.

The long-lasting and escalating aspect of cyberbullying has to do with the possibility to constantly reproduce and circulate material on social media (Keipi et al., 2017). Victims often have very little means to protect themselves online. With the lack of support from supervisors, employees are potentially left on their own with the problem (Forssell, 2018). As our results indicate, young people, men, and those with lower education are in the worst position when facing cyberbullying at work. Organizations should take an active role in tackling this predominant problem; many of them still lack procedures regarding cyberbullying at work. Although harmful content can be difficult to erase from the Internet, there is a clear need for procedures on how to handle cyberbullying acts and cyberbullying victimization at workplaces and guidelines on the appropriate behaviors and language used in the work context.

Strengths and Limitations

One strength of our study was the use of two different samples from Finland. The expert organization sample provided elaborate information on cyberbullying in the fields that are generally very active in the usage of social media. The representative national survey sample included all the occupational fields and offered a more broad and generalizable examination of cyberbullying victimization among the Finnish working population. The consistency of our

findings from the two samples strengthens the contribution of the study. Our study also focused on the role of social media and identity bubbles, which contributes to the cyberbullying studies.

Our study was, however, limited by its cross-sectional design and we are not able to make any causal claim; thus, in the future, researchers should also look for longitudinal data to understand the development and long-term consequences of cyberbullying victimization at work. The study also relies on self-reported data. Self-reported measures are vulnerable to problems including over- and underreporting, shortages in covering the whole range of the phenomenon under observation, low response rates, and a tendency to report trivial acts (Ellis et al., 2010, p. 281). In addition, self-report measurement can lead to overestimated effect sizes due to shared method variance (see e.g. Hawker & Boulton, 2000). In work context this could, for example, mean that employees with reduced work well-being, perceive their overall situation at work in a negative way and are thereby more sensitive to report experiences of cyberbullying. It should be noted, however, that cyberbullying can be more challenging to measure using peer reports, for example, as the virtual abuse (e.g. rude and aggressive messages) may not be visible to others.

We are limited by not including questions on offline bullying at work due to the length of the survey. Not being able to take offline bullying into account may overestimate the effects of cyberbullying, as research on bullying in school context suggests. However, the current evidence shows that majority of adults experience bullying online nowadays (Kowalski, et al., 2018). Hence, we are confident that our results are not compromised and they reflect the current work life. Future studies should, however, continue to analyze overlap of offline and online bullying also among adult population.

Our response rates for expert organization surveys ranged between 3.18% and 34.21%, which is relatively low, but fairly common for detailed online surveys (Bethlehem, 2016;

Sauermann & Roach, 2013). The national survey had also response of 28.31%. The figure could be higher, but it is acceptable considering that response rates in survey studies have dropped (Bethlehem, 2016).

Conclusion

Cyberbullying at work is a prevalent phenomenon and has negative associations on well-being at work, including psychological distress, technostress, and work exhaustion. Intense use of professional social media is tied to the phenomenon, and victims are often young. Our study, based on the identity bubble reinforcement model, showed that negative consequences are more severe among those with highly identity-driven social media use. These findings imply the need to find solutions such as anti-cyberbullying programs and victim reporting systems at workplaces.

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Table 1

Descriptive Statistics on Two Samples of Workers in Finland

	Expert workers (*N* = 563)				Nationwide workers (*N* = 1817)			
Categorical variables	**n**	**%**			**n**	**%**		
Cyberbullying at work victimization at least monthly	71	12.61			316	17.39		
Female gender	381	67.67			870	47.91		
Education								
Primary	6	1.07			62	3.43		
Secondary	188	33.39			899	49.49		
Applied university degree	207	36.77			430	23.64		
University degree	162	28.77			426	23.44		
Occupational area								
Manufacturing sector	-	-			544	29.92		
Service sector	-	-			332	18.29		
Business, communication, & technology	563	100			287	15.78		
Public administration	-	-			99	5.47		
Education	-	-			159	8.75		
Health and welfare	-	-			317	17.45		
Unknown	-	-			79	4.35		
Managerial position	89	15.81			338	18.60		
Remote work	402	71.40			543	29.90		
Low support from supervisor	86	15.28			415	22.86		
Continuous variables	**Range**	***M***	***SD***	**α**	**Range**	***M***	***SD***	**α**
Age	21–67	40.67	10.86	-	18–65	41.37	12.44	-
Private social media use	0–4	1.29	0.44	0.64	0–4	1.05	0.50	0.73
Professional social media use	0–4	0.60	0.33	0.67	0–4	0.27	0.34	0.85
Social media identity bubble	1–7	3.16	1.07	0.77	1–7	3.17	1.15	0.82
Technostress	0–24	8.04	5.30	0.81	6–42	12.84	7.14	0.89
Work exhaustion	0–30	13.64	7.44	0.91	0–30	14.69	7.70	0.92
Psychological distress	0–12	2.94	3.31	0.89	0–12	2.82	3.63	0.92

Table 2

Monthly Cyberbullying at Work Among Expert Organization Workers in Finland

	Unadjusted effects				Model 1 (adjusted effects)			
	OR	**SE**	**AME**	***P***	**OR**	**SE**	**AME**	***P***
Female gender	1.36	0.39	0.033	.285	1.20	0.36	0.018	.550
Age	0.97	0.01	-0.003	.018	0.97	0.01	-0.004	.023
Education (ref. prim./sec.)								
Applied university degree	1.27	0.39	0.027	.423	0.91	0.30	-0.010	.770
University degree	1.10	0.36	0.010	.770	0.82	0.30	-0.020	.591
Managerial position	0.75	0.28	-0.030	.440	0.69	0.28	-0.038	.372
Remote work	1.11	0.32	0.011	.714	0.97	0.31	-0.003	.933
Low support from supervisor	3.54	1.01	0.134	<.001	3.73	1.12	0.135	<.001
Private social media use	1.91	0.55	0.071	.024	0.87	0.36	-0.014	.731
Professional social media use	2.59	0.93	0.104	.008	2.96	1.45	0.111	.027
Social media identity bubble	0.97	0.12	-0.003	.801	0.94	0.12	-0.006	.639
					Model Pseudo R^2			.11
					Model *N*			563

Table 3

Monthly Cyberbullying at Work Among Workers in Finland

	Unadjusted effects				Model 1 (adjusted effects)			
	OR	**SE**	**AME**	***P***	**OR**	**SE**	**AME**	***P***
Female gender	0.68	0.09	-0.055	.002	0.80	0.11	-0.028	0.118
Age	0.97	0.01	-0.004	<.001	0.97	0.01	-0.004	<.001
Education (ref. primary)								
Secondary	0.49	0.15	-0.126	.018	0.53	0.17	-0.098	.045
Applied university degree	0.57	0.18	-0.103	.072	0.55	0.18	-0.092	.074
University degree	0.39	0.13	-0.154	.004	0.39	0.13	-0.136	.006
Occupational field (ref. industrial sector)								
Service sector	0.93	0.17	-0.010	.706	1.00	0.20	0.000	1.000
Business, communication, & technology	0.99	0.19	-0.001	.969	0.97	0.21	-0.003	.905
Public administration	1.07	0.29	0.011	.796	1.71	0.49	0.078	.059
Education	0.64	0.17	-0.060	.087	0.95	0.27	-0.006	.868
Health and welfare	0.67	0.13	-0.054	.042	0.96	0.21	-0.005	.858
Unknown	1.30	0.38	0.043	.373	1.52	0.46	0.059	.165
Managerial position	1.63	0.24	0.077	.001	1.38	0.23	0.041	.054
Remote work	1.47	0.19	0.058	.003	1.18	0.19	0.022	.290
Low support from supervisor	2.63	0.35	0.135	<.001	3.16	0.45	0.147	<.001
Private social media use	1.64	0.22	0.071	<.001	0.70	0.14	-0.046	.070
Professional social media use	3.27	0.53	0.164	<.001	3.44	0.77	0.158	<.001
Social media identity bubble	1.20	0.07	0.026	0.001	1.19	0.07	0.022	.005
					Model Pseudo R^2			.15
					Model *N*			1817

Table 4
Predictors of Well-Being Among Expert Organization Workers in Finland

	Psychological distress				**Technostress**				**Work exhaustion**			
	Model 1		**Model 2**		**Model 1**		**Model 2**		**Model 1**		**Model 2**	
	β	***P***	**β**	***P***	**β**	***P***	**β**	***P***	**β**	***P***	**β**	***P***
Female gender	0.06	.179	0.06	.173	0.16	<.001	0.18	<.001	0.11	.010	0.11	.010
Age	-0.05	.299	-0.06	.204	-0.11	.023	-0.14	.003	-0.08	.083	-0.09	.061
Education (ref. prim./sec.)												
Applied university degree	-0.05	.350	-0.04	.357	0.05	.262	0.05	.307	-0.02	.673	-0.02	.684
University degree	-0.02	.719	-0.01	.881	0.11	.018	0.12	.007	-0.01	.758	-0.01	.859
Managerial position	-0.11	.010	-0.11	.006	-0.05	.247	-0.04	.305	0.00	.919	0.00	.980
Remote work	0.01	.754	0.01	.846	0.10	.011	0.12	.004	0.01	.735	0.01	.791
Low support from supervisor	0.27	<.001	0.26	<.001	0.03	.397	0.01	.790	0.19	<.001	0.19	<.001
Private social media use	0.05	.412	0.04	.505	0.15	.006	0.18	<.001	0.07	.193	0.07	.227
Professional social media use	0.01	.907	0.01	.866	0.10	.037	0.01	.793	-0.07	.168	-0.07	.176
Social media identity bubble	-0.04	.400	-0.10	.020	0.11	.006	0.08	.067	-0.03	.529	-0.07	.128
Cyberbullying at work	0.13	.002	-0.31	.007	0.11	.004	-0.10	.383	0.19	<.001	-0.07	.522
Social media identity bubble x cyberbullying at work	-		0.47	<.001			0.23	.040	-	-	0.29	.014
Model R2	.13		.15		.21		.21		.15		.17	
Model N	563		563		563		563		563		563	

Table 5
Predictors of Well-Being Among Workers in Finland

	Psychological distress				Technostress				Work exhaustion			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	β	P	β	P	β	P	β	P	β	P	β	P
Female gender	0.10	<.001	0.10	.000	0.033	.137	0.03	.131	-0.01	.752	-0.01	.746
Age	-0.09	.001	-0.09	.002	-0.13	<.001	-0.13	<.001	-0.09	<.001	-0.09	.001
Education (ref. primary)												
Secondary	-0.04	.606	-0.04	.611	0.01	.849	0.01	.866	-0.06	.381	-0.06	.387
Applied university degree	-0.06	.364	-0.06	.369	0.023	.642	0.02	.658	-0.08	.181	-0.08	.186
University degree	-0.10	.123	-0.10	.122	0.02	.687	0.02	.669	-0.04	.491	-0.04	.488
Occupational area (ref. manufacturing)												
Service	0.03	.226	0.03	.227	0.025	.309	0.02	.304	0.009	.731	0.01	.732
Business, communic., & techn.	0.01	.607	0.01	.633	0.003	.898	0.01	.810	0.007	.775	0.01	.812
Public administration	0.03	.191	0.03	.187	-0.01	.648	-0.01	.628	0.015	.529	0.02	.522
Education	0.08	.006	0.08	.006	0.008	.746	0.01	.732	0.009	.705	0.01	.711
Health and welfare	0.04	.157	0.04	.155	-0.04	.130	-0.04	.122	-0.01	.738	-0.01	.746
Unknown	0.01	.558	0.01	.552	-0.01	.648	-0.01	.636	-0.01	.729	-0.01	.735
Managerial position	-0.03	.207	-0.03	.206	0.015	.482	0.02	.477	-0.05	.021	-0.05	.021
Remote work	0.03	.217	0.03	.225	0.044	.073	0.05	.063	0.021	.405	0.02	.421
Low support from supervisor	0.12	<.001	0.12	<.001	0.031	.154	0.03	.170	0.197	<.001	0.20	<.001
Private social media use	0.05	.121	0.05	.100	0.014	.641	0.01	.673	-0.02	.524	-0.01	.628
Professional social media use	0.02	.531	0.02	.521	0.247	<.001	0.24	<.001	0.036	.207	0.04	.198
Social media Identity bubble	-0.02	.411	-0.01	.693	0.247	<.001	0.22	<.001	-0.03	.188	-0.02	.468
Cyberbullying at work	0.24	<.001	0.30	<.001	0.158	<.001	-0.03	.674	0.221	<.001	0.31	<.001
Social media identity bubble x cyberbullying at work			-0.07	.355			0.21	0.013			-0.09	.128
Model R2	0.12		0.12		0.27		0.27		0.12		0.12	
Model N	1817		1817		1817		1817		1817		1817	

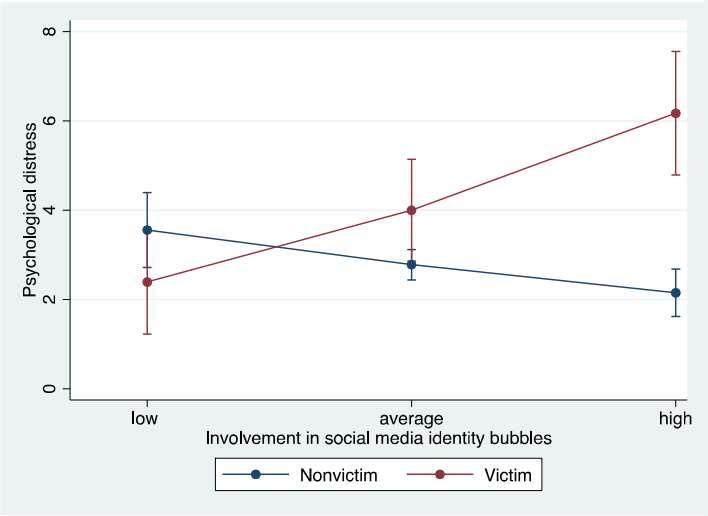


Figure 1. Moderating role of involvement in social media identity bubbles on psychological distress (expert org. sample).

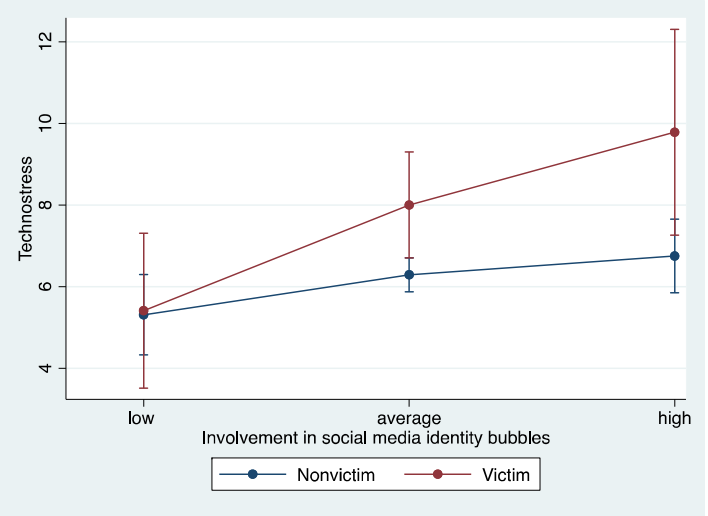
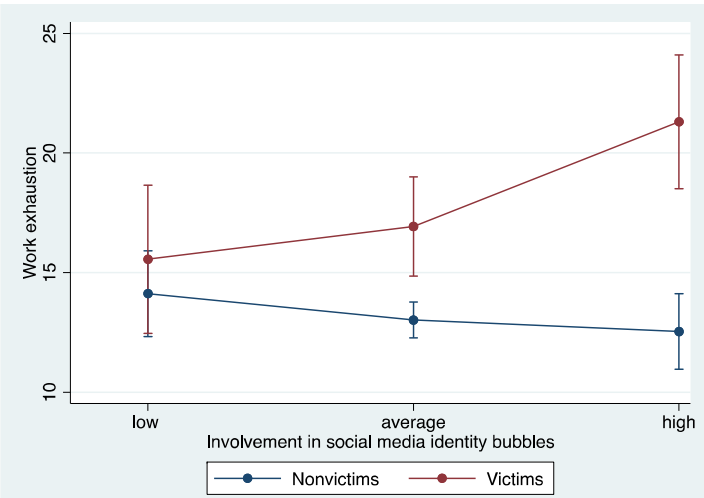


Figure 2. Moderating role of involvement in social media identity bubbles on technostress (expert org. sample).



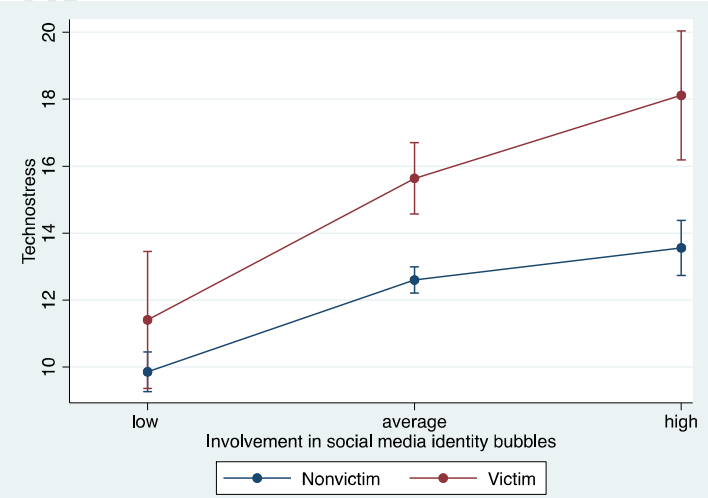


Figure 3. Moderating role of involvement in social media identity bubbles on work exhaustion (expert org. sample).
Figure 4. Moderating role of involvement in social media identity bubbles on technostress (national sample).

Appendix A

Descriptive Statistics of Expert Organization Sample (*N* = 563)

	Field of industry	Number of targeted employees	Number of responses	Response rate (%)
Company A	Personnel services	677	128	18.91
Company B	Retail	870	194	22.30
Company C	Publishing	152	52	34.21
Company D	Telecommunications	1,026	102	9.94
Company E	Finance	2,737	87	3.18

Appendix B

Ten-Item Modified Scale Based on Cyberbullying Behavior Questionnaire

How often during the last six months have you experienced the following in your work:

1. Your work performance has been commented on in negative terms on social media.

2. Rude messages have been sent to you via social media.

3. Necessary information has been withheld, making your work more difficult (e.g., being excluded from e-mail lists).

4. Aggressively worded messages (e.g., capital letters, bold style, or multiple exclamation marks) have been sent to you.

5. Threatening messages about your friends/your family have been sent to you via social media.

6. Assaults on social media have been made on you as a person, your values, or your personal life.

7. Extracts from your messages have been copied so that the meaning of the original message is distorted.

8. Offensive photos/videos of you have been posted on social media.

9. False statements about you have been spread on social media.

10. Colleagues have excluded you from the social community on social media (e.g., Facebook, Twitter, Instagram).

Cyberbullying Victimization at Work: Social Media Identity Bubble Approach

Highlights

This study on cyberbullying at work focused on the increasing role of social media

Organizational and nationally representative data were used

Cyberbullying victims at work were active users of professional social media

Victimization was associated with psychological distress, exhaustion, and technostress

Victims who were in social media identity bubbles had more psychological problems